

ABSTRACT OF THE DISCLOSURE

Methods for calibrating and positioning a recording head having a bi-directional transducer for use with a magnetic storage device is disclosed. The bi-directional transducer of the recording head is positioned within the recording head to enable vertical fly height motion and lateral track-to-track motion of the transducer to occur with respect to the surface of a magnetic storage medium within the storage device. Calibration of the bi-directional transducer in the fly height and track-to-track directions enables the transducer to align itself with more precision with the magnetic medium surface, thereby improving data read and write operations for the storage device. Calibration algorithms for fly height and track-to-track adjustment are presented, and possible motion of the bi-directional transducer is resolved into multi-function equations to account for various variables relating to transducer motion.

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